



PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/645,726
				Filing Date	August 21, 2003
				First Named Inventor	Joseph C. Mollendorf
				Art Unit	4775-1772
				Examiner Name	Unknown
Sheet	1	of	5	Attorney Docket Number	19226/2181 (R-5766)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
✓	1	US-3,660,849	05/09/1972	Jonnes et al.	
✓	2	US-3,856,721	12/24/74	Fritschel	
✓	3	US-4,077,922	03/07/1978	Farrissey, Jr. et al.	
✓	4	US-4,252,378	02/24/81	DeBolt et al.	
✓	5	US-4,276,341	06/30/1981	Tanaka	
✓	6	US-5,120,385	06/09/1992	Takahashi et al.	
✓	7	US-5,569,513	10/29/1996	Fidler et al.	
✓	8	US-5,888,642	03/30/99	Meteer et al.	
✓	9	US-6,284,809 B1	09/04/01	Plummer et al.	
✓	10	US-6,319,599	11/20/2001	Buckley	
✓	11	US-6,349,412 B1	02/26/02	Dean	
✓	12	US-6,389,865 B1	05/21/02	Easterbrook	

FOREIGN PATENT DOCUMENTS							
Examiner Initials [*]	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Application of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴ Kind Code ⁵ (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials [*]	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
✓	13	Dow Corning, Product Information Sheet for Silicone Sealants: Dow Corning® 756 Silicone Building Sealant-HP, 3 pages	
✓	14	Herrmann et al., "Aerogels: The Leading Edge in Thermal Insulation," <i>H & V Engineer</i> 68(725):8-11 (1995)	
✓	15	Lu et al., "Thermal Transport in Organic and Opacified Silica Monolithic Aerogels," <i>Journal of Non-Crystalline Solids</i> 145:207-210 (1992)	
✓	16	Hümmer et al., "Heat Transfer in Opacified Aerogel Powders," <i>Journal of Non-Crystalline Solids</i> 145:211-216 (1992)	
✓	17	Zeng et al., "Pore Size Distribution and Apparent Gas Thermal Conductivity of Silica Aerogel," <i>Transactions of the ASME</i> 116:756-759 (1994)	
✓	18	Lu et al., "Thermal Conductivity of Monolithic Organic Aerogels," <i>Science</i> 255:971-972 (1992)	
✓	19	Zeng et al., "Mean Free Path and Apparent Thermal Conductivity of a Gas in a Porous Medium," <i>Transactions of the ASME</i> 117:758-761 (1995)	

Examiner Signature	<i>D. Long</i>	Date Considered	8/6/05
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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				Group Art Unit	1775 1772
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W	20	Hashin, "Assessment of the Self Consistent Scheme Approximation: Conductivity of Particulate Composites," <i>J. Composite Materials</i> 2(3):284-300 (1968)	
W	21	Benveniste, "Effective Thermal Conductivity of Composites with a Thermal Contact Resistance Between the Constituents: Nondilute Case," <i>J. Appl. Phys.</i> 61(8):2840-2843 (1987)	
W	22	Ohsawa et al., "A Study of Composite Foams for Diving Suits Subjected to High Hydrostatic Pressure," <i>J. of Appl. Polymer Science</i> 23:1233-1245 (1979)	
W	23	Chan et al., "Conductance of Packed Spheres in Vacuum," <i>Transactions of the ASME-Journal of Heat Transfer</i> 95:302-308 (1973)	
W	24	Wawryk et al., "The Influence of Microsphere Diameter on the Coefficient of Thermal Conductivity of Microsphere Insulation," <i>Cryogenics</i> pp. 441-443 (August 1983)	
W	25	Baudot et al., "Thermal Conductivity of a RTV Silicone Elastomer Between 1.2 and 300 K," <i>Cryogenics</i> 38(2):227-230 (1998)	
W	26	Hatta et al., "Thermal Conductivity of Coated Filler Composites," <i>J. Appl. Phys.</i> 59(6):1851-1860 (1986)	
W	27	Benveniste, "A Differential Effective Medium Theory With a Composite Sphere Embedding," <i>Transactions of the ASME-Journal of Applied Mechanics</i> 54:466-468 (1987)	
W	28	Silicones, Inc., Product Information Sheet for P-10, 2 pp.	
W	29	Cabot Corporation, Product Information Sheet for Nanogel™ Fine Particle Aerogel, 2 pp. (2002)	
W	30	Cabot Corporation, Product Information Sheet for Nanogel™ Aerogel Beads, 2 pp. (2002)	
W	31	Silicones, Inc., Material Safety Data Sheet for Product Name: P-10A, 2 pp. (1999)	
W	32	Silicones, Inc., Material Safety Data Sheet for Product Name: P-10B, 2 pp. (1999)	
W	33	Silicones, Inc., Material Safety Data Sheet for Product Name: GI-245 A, 2 pp. (1998)	
W	34	Silicones, Inc., Material Safety Data Sheet for Product Name: GI-245 B, 2 pp. (1998)	
W	35	Silicones, Inc., Product Information Sheet for GI-245 Special Effect Silicone, 2 pp.	

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u	36	Silicones, Inc., Price Sheet for RTV-2 Silicone Rubber, 1 page (1997)	
u	37	Silicones, Inc., Product Information Sheet for GI-300 Series Silicone Rubber, 2 pp.	
u	38	Silicones, Inc., Product Information Sheet for GI-320 Silicone Rubber, 1 page	
u	39	Silicones, Inc., Product Information Sheet for GI-650 Silicone Rubber, 2 pp.	
u	40	Silicones, Inc., Product Information Sheet for GI-1120 Silicone Rubber, 2 pp.	
u	41	Silicones, Inc., Product Information Sheet for GI-1110 Silicone Rubber, 2 pp.	
u	42	Silicones, Inc., Product Information Sheet for GI-1040 Silicone Rubber, 2 pp.	
u	43	Silicones, Inc., Product Information Sheet for GI-1100 Silicone Rubber, 2 pp.	
u	44	Silicones, Inc., Product Information Sheet for GI-1032 Silicone Rubber, 2 pp.	
u	45	Silicones, Inc., Product Information Sheet for GI-1000 Silicone Rubber, 2 pp.	
u	46	Silicones, Inc., Product Information Sheet for GI-Ultra-Fast Catalyst, 1 page	
u	47	Silicones, Inc., Product Information Sheet for GI-184B/GI-Thixotropic Activator, 2 pp. (1996)	
u	48	Silicones, Inc., Product Information Sheet for P Series RTV Silicone Rubbers for Moldmaking Applications, 2 pp.	
u	49	Silicones, Inc., Product Information Sheet for P-44 Silicone Rubber, 2 pp.	
u	50	Silicones, Inc., Product Information Sheet for P Series RTV Silicone Rubbers for Electrical Applications, 2 pp.	
u	51	Silicones, Inc., Product Information Sheet for Equipment Required for Two-Component RTV Silicone Rubber Mold-Making, 2 pp.	
u	52	Silicones, Inc., Product Information Sheet for Helpful Information Relating to Various Silicones, Inc. Products, 1 page	
u	53	Silicones, Inc., "How to Make a Silicone Mold," 2 pp.	
u	54	Dow Corning Corporation, Product Information Sheet for Dow Corning® 832 Multi-Surface Adhesive Sealant, 2 pp. (1997)	

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	55	Akzo Nobel, Product Specification Sheet for Expancel® DE Dry Expanded Microspheres, Issue 01.11, 1 page	
	56	General Electric Company, Datasheet for RTV615, RTV655, and RTV656 High Strength Transparent Silicone Rubber Compounds, 5 pp.	
	57	General Electric Company, Datasheet for LIM®6010, Liquid Silicone Rubber, 3 pp.	
	58	General Electric Company, Product Information Sheet for SS4004P, SS4044P, SS4120, SS4155, and SS4179, Silicone Primers for Use with One and Two Component RTV Silicone Adhesive Sealants, pages 1, 2, and 4	
	59	General Electric Company, Datasheet for RTV400T, Translucent Silicone Moldmaking Rubber, pages 1 and 3	
	60	General Electric Company, Datasheet for SF96® 50, SF96® Silicone Fluids, 8 pp.	
	61	Silicones, Inc., RTV-2 Silicone Rubber Product Selection Guide, 4 pp.	
	62	Perlite Institute Inc., World Trade Organization, "Basic Facts About Perlite," 3 pp., available at http://www.perlite.org/blfacts.htm	
	63	Dow Corning Corporation, Material Safety Data Sheet for Dow Corning® 3145 RTV Adhesive/Sealant - Gray, pages 1, 3, 5, and 7 (revision date Feb. 15, 2002)	
	64	3M Performance Enhancement Sheet for 3M™ Microspheres Engineered for a Wide Choice of Unique Enhancements, 8 pp. (1998)	
	65	3M Microspheres Comparison Chart for 3M™ Scotchlite™ Glass Bubbles General Purpose Series, 3 pp.	
	66	Aspen Aerogels, Inc., Material Safety Data Sheet for ASP-USB Silica Aerogel Beads, 4 pp. (2001)	
	67	Dow Corning Corporation, Material Safety Data Sheet for Dow Corning® Q3-6611 Adhesive, Gray, pages 1, 3, 5, and 7 (revision date Jan. 22, 2002)	
	68	Silbrico Corporation, Information Sheet for Sil-Cell Microcellular Filler, 3 pp.	
	69	3M, Product Information Sheet for 3M™ Z-Light Spheres™ Ceramic Microspheres Gray Grades, pages 1 and 3 (2000)	
	70	3M, Cast Polyester Applications Profile, 2 pp.	
	71	3M, Microspheres Thermal Conductivity Report, 3 pp.	
	72	3M, Cost Comparison Guide for 3M™ Scotchlite™ Glass Bubbles, 7 pp.	

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✓	73	Grealish et al., "State-of-the-Art on Deep Water Thermal Insulation Systems," <i>Proceedings of OMAE '02, 21st International Conference on Offshore Mechanics and Arctic Engineering</i> , Oslo, Norway, pp. 339-347 (June 23-28, 2002)		
✓	74	Wang et al., "Syntactic Foam Thermal Insulation for Ultradeep High Temperature Applications," <i>Proceedings of OMAE '02, 21st International Conference on Offshore Mechanics and Arctic Engineering</i> , Oslo, Norway, pp. 155-166 (June 23-28, 2002)		
✓	75	Kyo, "Effective Thermal Conductivity of Composite Foam," <i>Heat Transfer-Japanese Research</i> 23(3):258-276 (1994)		
✓	76	Wawryk et al., "Heat Transfer in Microsphere Insulation," <i>Journal of Thermal Analysis</i> 34:249-257 (1988)		
✓	77	Lu et al., "Thermal Transport in Opacified Monolithic Silica Aerogels," <i>12 ETPC Proceedings</i> 23:431-436 (1991)		
✓	78	Hrubesh et al., "Thermal Properties of Organic and Inorganic Aerogels," <i>J. Mater. Res.</i> 9(3):731-738 (1994)		
✓	79	Rowe, "Final Report, N00298-69-Q-K786, Development of a Flexible Swimsuit Material for 600 Ft. Salt Water Depths," including reports on Phases I (Nov. 1969), II (April 1970), and III (June 1971), Emerson & Cuming, Inc., Dielectric Materials Division, Canton, MA, 26 pp. (June 1971)		
✓	80	Norris et al., "A Generalized Differential Effective Medium Theory," <i>J. Mech. Phys. Solids</i> 33(6):525-543 (1985)		
✓	81	Audet et al., "Development and Evaluation of Deep-Sea Swimsuit Materials," Technical Report No. 108, Navy Clothing and Textile Research Unit, Natick, MA, Work Unit No. 523-003-01, 61 total pages (including attachments) (1973)		
✓	82	Miwa et al., "Thermal Conductivity and Flexural Rigidity of Composite Foam for Wet Suit Usable Under High Static Hydraulic Pressure," 41(5):T-189 to T-195 (1985) (English abstract and figure legends)		

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